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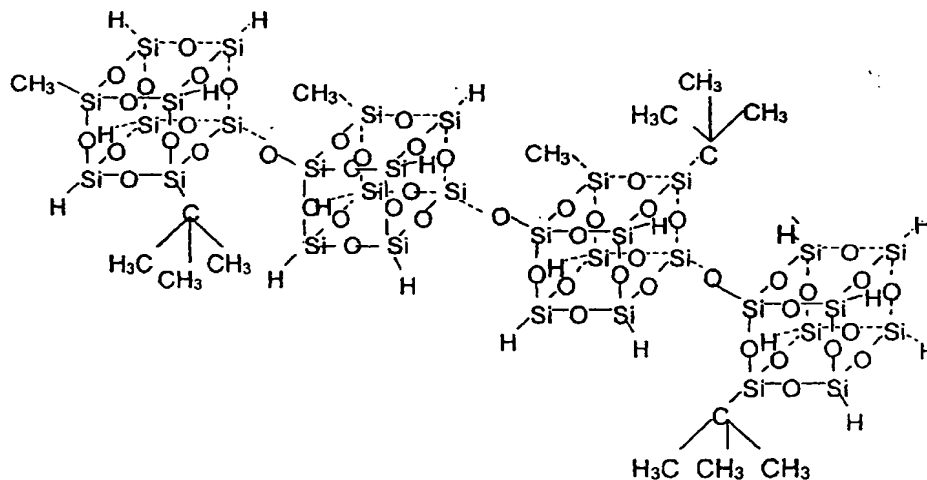
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[Continued on next page]

(54) Title: NANOPOROUS MATERIALS AND METHODS OF FORMATION THEREOF



(57) Abstract: Low dielectric materials are described herein that comprise a plurality of pores or nanopores in addition to the ultrananopores. It is further contemplated that the low dielectric materials described herein will have a dielectric constant of less than about 3. The dielectric materials are formed from polymer compositions, wherein the polymer compositions comprise a plurality of monomers and wherein at least one monomer comprises a radical precursor bonded to a structural precursor. Further, methods of forming dielectric materials from polymer compositions are presented. The figure shows the chemical structure for a methyl/t-butyl Low organic Content/Low Organic Siloxane Polymer.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/26276

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>												
IPC(7) : H01B 3/02, 3/30, 3/46; B32B 3/26; C08G 65/00, 77/04												
US CL : 252/570,573; 428/304.4,312.6,447; 521/154,180; 525/390,416,474,534												
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<b>B. FIELDS SEARCHED</b>												
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet												
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>												
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
X,P	US 6,472,076 B1 (HACKER) 29 October 2002 (29.10.2002), column 2, lines 15-25, column 11, lines 1-67, column 12, lines 37-67, column 14, lines 20-40.	1, 3-6, 7, 9, 11, 15-19, 28, 32, 33, 35-38, 40										
X	US 6,107,357 A (HAWKER et al) 22 August 2000 (22.08.2000), column 4, line 64 through column 5, line 33, column 5, line 53 through column 6, line 56, column 8, lines 1-24, column 10, lines 6-63, column 11, lines 27-60.	1-9, 11-21, 23, 24, 26-40										
X	US 6,143,360 A (ZHONG) 07 November 2000 (07.11.2000), column 3, lines 30-66, column 6, lines 39-67.	1-7, 9, 11-21, 23, 24, 26-38, 40										
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A	US 6,177,143 B1 (TREADWELL et al) 23 January 2001 (23.01.2001), column 2, lines 19-62.	1-41										
A	US 6,235,353 B1 (DRAGE et al) 22 May 2001 (22.05.2001), column 2, lines 38-55.	1-41										
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.												
* Special categories of cited documents: <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
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**INTERNATIONAL SEARCH REPORT**

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**Continuation of B. FIELDS SEARCHED Item 3:**

EAST search, search terms: ultranapore, ultranaporous, dielectric material, dielectric costant, radical precursor, structural precursor, adamantane, pore, nanometer, polysiloxane, organopolysiloxane, polyorganosiloxane, polydiorganosiloxane, diorganopolysiloxane, silicone, siloxane, hydridosiloxane, organohydridosiloxane, silsesquioxane, polysilsesquioxane.